

ON THE NATURE OF HEALING: A FRACTAL SETTING FOR PEDIATRIC TRAUMA THERAPY

[ABSTRACT]

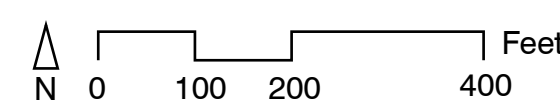
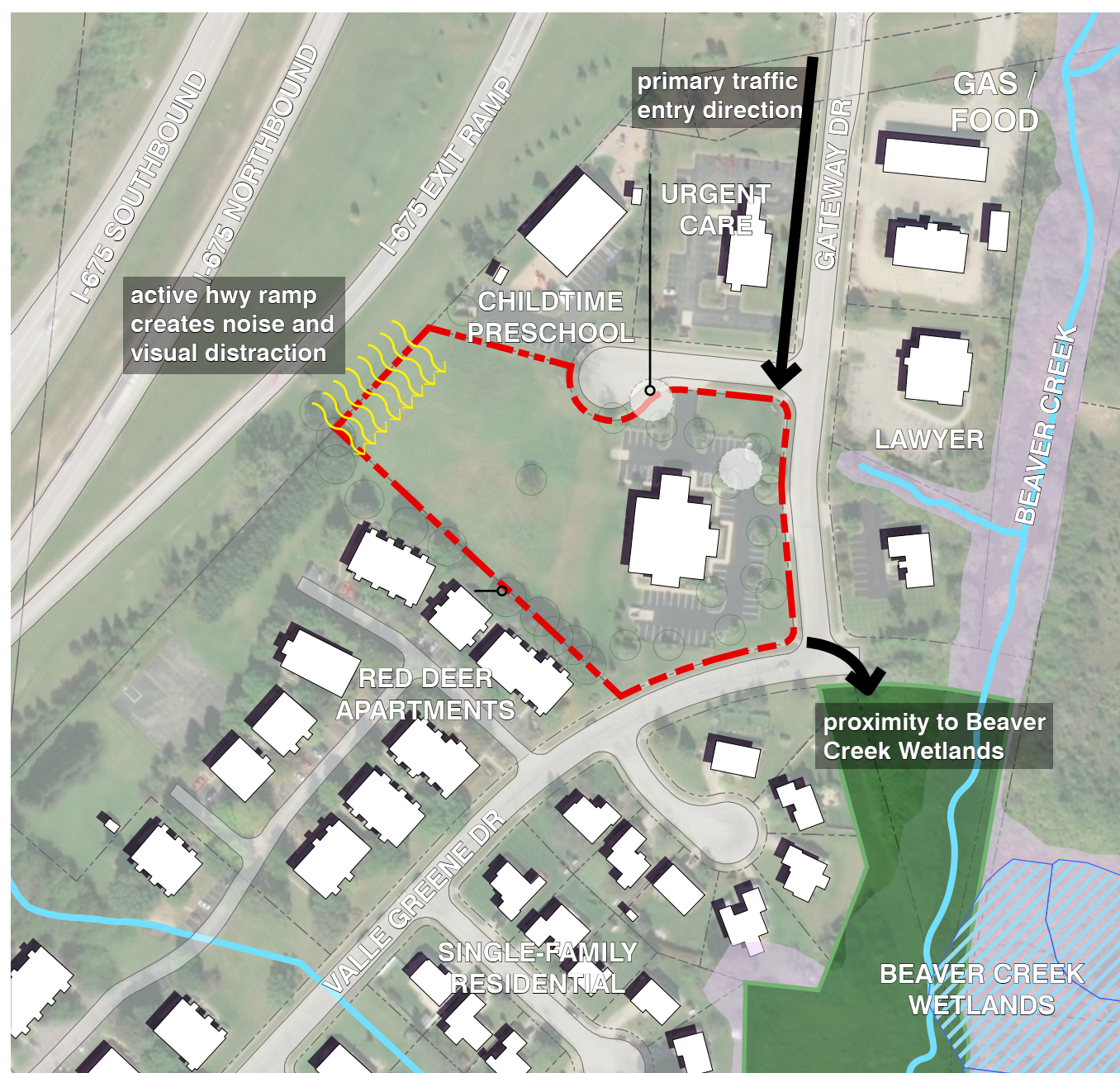
This landscape architecture project addresses the need for a nature-based therapeutic environment for children in one-on-one and group trauma therapy. The proposed design will be a therapeutic setting for experiential cognitive-behavioral therapy.

The design incorporates a unique design methodology by applying Kaplan's elements of fascination and Hagerhall's fractal theory to meet the needs of evidence-based therapeutic practices by using specific aspects of nature for psychological responses.



[SITE LOCATION: FAIRBORN, OHIO]

The site is located in Fairborn, Ohio, at Michael's House, a satellite trauma and abuse center of Dayton Children's Hospital. The existing building and parking lot provides infrastructure, while the surrounding space and adjacent lot provide a total of 3.7 acres for the garden.



[PROGRAM ELEMENTS]

Based on research of therapeutic practices and precedent studies, this matrix shows landscape elements and which stage(s) of trauma integration they support. Many elements can be adapted to multiple stages by the therapist, however, the complexity of the surrounding environment impacts the effectiveness in each stage. Every stage requires an environment of fascination to build involuntary attention to continually break the directed attention barrier.



DIAGNOSTIC WAITING AREA

The diagnostic waiting area is a space for families to wait before and during therapy sessions.

A variety of nature-based play equipment invite children to play at their current risk level.

CONSULTATION SPACE

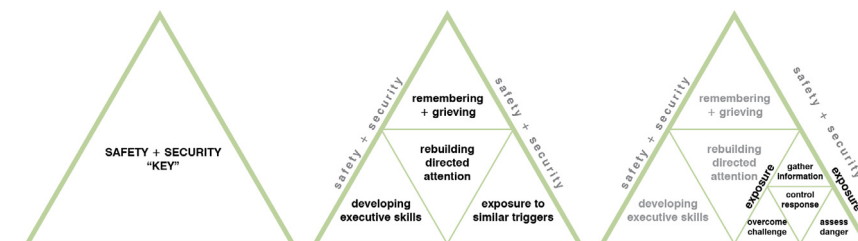
Several seating areas adjacent to building allow staff to find a resting space and staff

and parents to hold relaxed consultation and progress meetings away from commotion.

WATER SYSTEM

Using recirculated stormwater, a branching water system begins on the hills and travels to a catchbasin on the south end. Small water areas and rain gardens encourage interaction.

[DESIGN FOUNDATION]



FRACTAL HEALING

The human brain is built on fractal connections, as is healing following trauma. The three stages of healing build upon a "key" of safety that is necessary at all levels of healing. Each return to the trauma requires added details and more layers of integration. As a child recovers, the meaning and understanding of safety deepens, demonstrating the fractal nature of healing. The site concept is divided into spaces, activities, and environments especially suited for clients within a stage of integration, with the opportunity to move deeper into the garden or closer to social street interactions with more healing time.

FRACTAL CONCEPT

The fractal dimension (FD) of an environment turns the mind to danger, fascination, or being bored. In its entirety, the site is composed of a collection of spaces within spaces, like a fractal leaf. Each space is part of a larger space with similar properties, within another larger space, until the entire site is a unit. These spaces are then connected by a branching and looping circulation pattern. Smaller, more intricate spaces are found in stage 3, while larger repetitions are in stage 1. Within each space and area, materials and plants similarly become more detailed and finely textured with each passing stage. The composite intensity created by a combination of material, spatial, and vegetative sizes, textures, and patterns creates simple (low FD), fascinating (mid FD), or too complex (high FD).

SPATIAL CONCEPT

While each stage of healing uses specific programmed activities and components, common threads tie the site together, allowing for smooth transitions between spaces and stages. Many spaces can be used for multiple activities, though the fractal density of the space affects the beneficiary value to each activity.

[PLANTING DESIGN]

The planting design is based on cultural requirements of individual plants and the desired psychological impact from colors and fractal dimension. Planting zones are defined by survival requirements (sun,

shade, water. A list of potential native plants was compiled and sorted within these zones. Closer to the Michael's House building and in Stage 1, plants are arranged in larger massings, while in Stage 3 the more finely

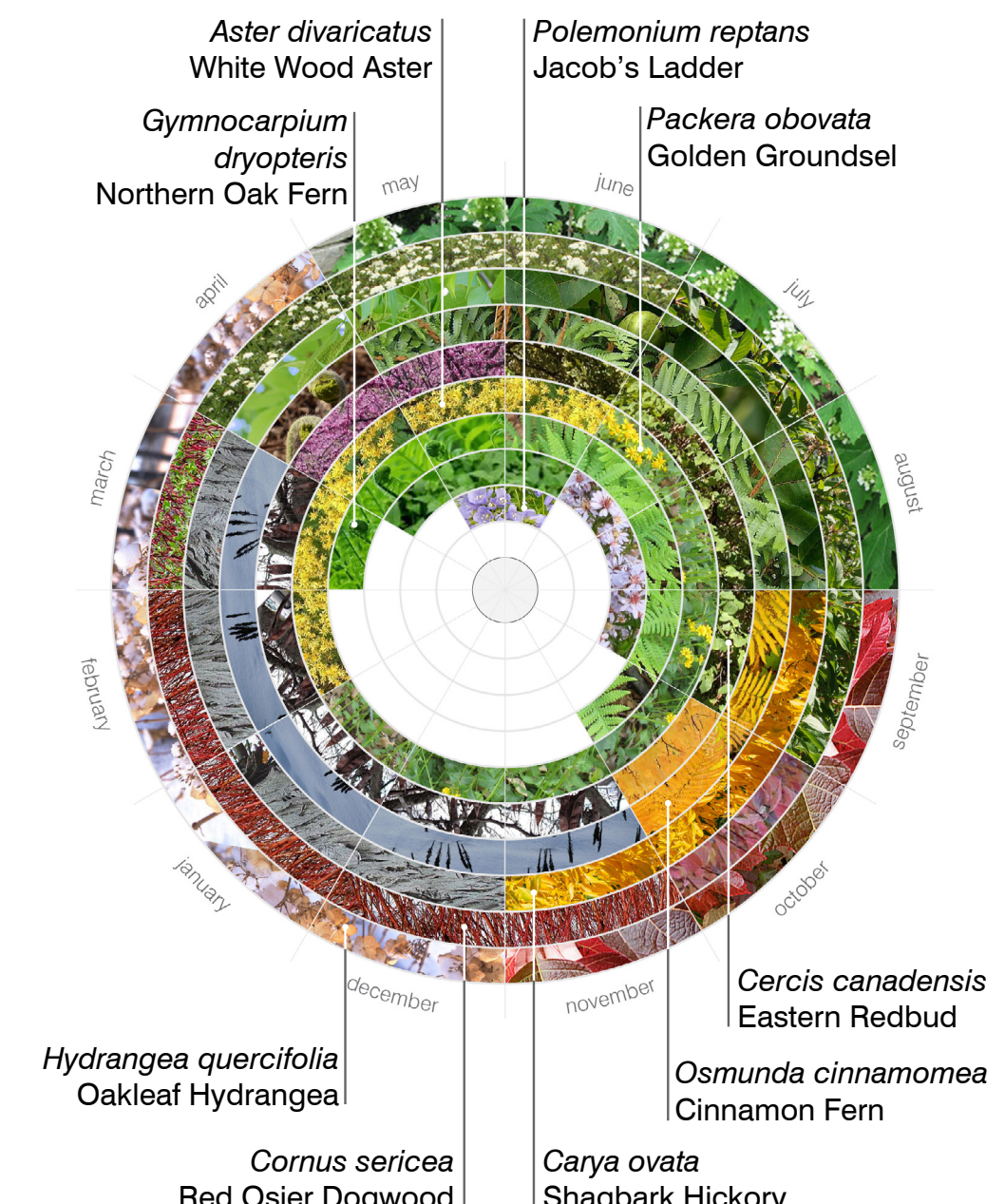
textured plants are mixed for a higher fractal dimension. Winter therapy clients see seedheads, textured bark, shrub branches. Some woodland areas provide fallen materials to manipulate and construct with.

PLANTING ZONES



WOODLAND ONE (C)

This area contains a mixture of ferns, known for fractal structure, and low groundcovers. Canopy trees and an open understory balance a feeling of awareness and enclosure for safety.



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